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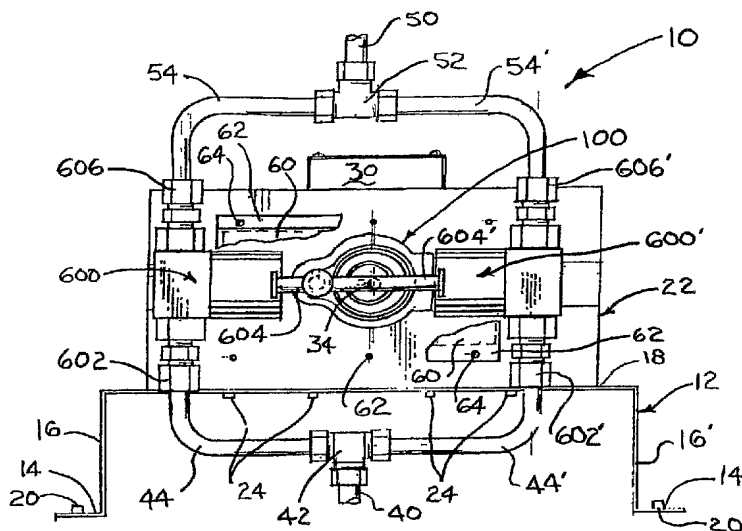
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(54) Title: APPARATUSES AND METHODS FOR PUMPING FLUIDS



(57) **Abstract:** Apparatuses and methods are provided for transferring axial rotational motion of a drive shaft to linear reciprocating motion to drive a piston, for example in a fluid pump. The apparatus includes a cam having: a generally cylindrical body portion; and a drive-shaft connector, wherein the drive-shaft connector is: adapted to be part of an operable connection between the drive shaft and the cam, and located along an eccentric axis of the cam. The apparatus includes a plurality of bearings, wherein the plurality of bearings are operatively positioned around the cam. The apparatus also includes a planetary, wherein the planetary includes: a generally cylindrical opening adapted to be operatively positioned around the plurality of bearings; and a follower connector, wherein the follower connector is adapted to be part of an operable connection transferring a component of the circular orbital motion of the planetary to the linear reciprocating motion of the piston. Also provided is an improved pump and improved discharge valve assembly for pumping fluids.

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